Socio-Economic Characters and Activities of Support Zone Communities in Gashaka Gumti National Park

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Abstract

The study was conducted at Gashaka Gumti National Park to determine socio-economic activities and their relationship with the forest. The Result obtained shows that, the age of the respondents was presented in Table 1. The pooled result indicated that there were 29.82%, for the age class of 36 - 45 years, 28.77%, for the age class of 26 - 35, 20.35%, for the age class of 15 - 25; 13.68%, for the age class of 46 - 55; and 7.37% for the age class of 56 years and above. The result on gender indicated that Males were 75.78%, while female was 24.21%, of the population. The result of marital status revealed that married respondents recorded 58.24%; singles had 29.82% while the widows recorded 11.93%. The results of the family size indicated that the family size of 10 - 14 recorded 37.54%; 5 - 9 family size had 22.46%; 15 - 19 recorded 20.70%; 1 - 4 had 11.23% while 20 and above recorded 8.07%. The result of occupation of the respondent indicated that farmers/grazers recorded 44.91%; business men/women were 18.59%; public servants recorded 14.74%, students were 12.98%, while house wives/widows recorded 8.77%. The educational qualification of the respondents revealed that non formal education recorded 37.89%, primary education recorded 21.40%, adult education, had 15.78%, and post primary education recorded 15.78% while tertiary education had 9.12%. The result of income level of the respondents revealed that N30,000 - N39,000 had 34.38%, N20,000 - N29,000 recorded 23.86%, N10,000 - N19,000, had 23.16%, N40,000 - N 49,000, had 10.88% and N50,000 and above recorded 7.72%. The research reviles that the greater are still in their early forties, but the level of education was lower among the population and which may be the result of the lower income among the population; of which it may have a negative impact on the survival of the forest and its biodiversity. Therefore, more income and better education may help in maintaining a balanced relationship between the population and its environs.

1. Introduction

Forest or any sizable community of trees, shrubs and herbs play indispensable roles in creating and preserving a quality environment [1]. The natural tranquility of these protected areas along with communities of animals and birds in them combine to make each a niche destination [2]. Conservation of the resources of nation's environment plays essential role in the development of such country. Forests are a key component of our landscape and life-support system, in view of both the products and the services which they provide. Nigeria's indigenous and planted forests are important for economic, environmental and socio-cultural wellbeing, through provision of both wood and non-wood products and services. Indeed, it has been recognized that the economic, social and environmental well-being of a population is closely associated with the health of forests and their sustained ability to provide multiple benefits. A nation's system of protected areas is designed to suit its own resources and requirements for conserving the resources as a sustainable basis for human development. Conservation practices on natural resources is positive, embracing preservation, maintenance, sustainable, utilization, restoration and enhancement of the resources [3]. Nigeria is a nation that is endowed with numerous natural resources. With a land mass of approximately 932,768 km^2 including deep mangrove forest in the south and savanna in the north, it includes a human population of over 193, million people [4]. Countries worldwide have designated some areas as protected areas resulting in many benefits. This includes the central role they play in socio-economic development of local inhabitants in surrounding rural areas. They contribute to the better lifestyle and standard of living of people. In national parks, game reserves and other protected areas unique natural resources (flora and fauna), sceneries and landscapes areas are protected, managed and regulated for human benefit from one generation to another. These protected areas are harboring outstanding natural resources and scenic areas of national or international interest/important for scientific, educational and recreational uses. In Nigeria conservation of diversity of wildlife species are maintained at the optimum level commensurate with other forms of land use in order to ensure the continued existence of wildlife for the purpose of their sustainable utilization for benefit of the people and this is among the objectives of Nigeria's National Park Service [5]. Proper management of natural resources in any nation projects good image and strength of the country.

2. Material and Method

2.1. Description of the Study Area

Gashaka Gumti National Park is located in the North Eastern region of Nigeria, covering an area of about 6731 sq·km^2. It is the largest National Park in the country. It lies between Latitudes 6°55′ and 8°05′ North and between Longitude 11°11′ and 12°13′ East [6]. The Park's name is derived from two of the regions oldest and most historic settlements, Gashaka village in Taraba State and Gumti village in Adamawa State. The Park was created by the Federal Government of Nigeria Decree No. 36 of 1991 by merging of Gashaka Game Reserve with Gumti Game Reserve [6]. The park, like any other park in Nigeria, was established as a protected area for the purpose of nature conservation, recreation, ecotourism, scientific and medical research and to promote art, craft and cultural value of the indigenous people surrounding the park [7].

2.2. Data Collection

A focus group discussion (FGD) was used which is an in-depth field method that brings together a small homogeneous group (usually six to twelve persons) to discuss topics on a study agenda. The purpose of this discussion is to use the social dynamics of the group, with the help of a moderator/facilitator, to stimulate participants to reveal underlying opinions, attitudes, and reasons for their behavior. Focus group discussions are a data collection method. Data is collected through a semi-structured group interview process. Focus groups are generally used to collect data on a specific topic. Focus group methods emerged in the 1940s with the work of Merton and Fiske who used focus groups to conduct consumer satisfaction [8].

Structured questionnaire was administered to respondents. The respondents (enclave's dwellers) include: farmers, pastoralist, hunter, traditional rulers, tourist, civil servants and traders. Respondents include both genders and are of the age 18 years and above. Interviews were also conducted with park management. Anthropogenic factors: Information on the socio-economic characteristics of enclave's dwellers of the park and anthropogenic activities were determined using structured questionnaire and purpose group discussion (interview) with park management. Four enclave communities of Gashaka Gumti National Park (Gashaka, Hendu, Shirigu, and Fillinga) with an approximate population of 5369 [9], were randomly selected to represent the enclave dwellers of the park, three hundred questionnaires were distributed randomly among the enclave communities based on their individual populations using [10] allocation techniques as adopted by [11]. The formula is as follows;

$$Nh = \frac{Nh \times n}{N} \tag{1}$$

where

Nh = Number of people in each sampling community;

N = Total number of people in all sampling communities;

n = Number of questionnaires distributed among the sampling communities.

Fifty questionnaires were also administered among the park officials, given a total of three hundred and fifty in all. Three hundred and twenty-three were appropriately filled and returned representing 92%.

2.3. Statistical Analysis

Analysis of socio-economic and anthropogenic factors data: The data were analyzed using simple descriptive statistics such as mean and percentages [12].

3. Result and Discussion

3.1. Socio-Economic Characteristics and the Anthropogenic Activities in the Study Area

The Age Distribution of Respondents in the Study Area

The Result of age distribution in the study area is presented in Table 1. The pooled result indicated that there were 29.82%, for the age class of 36 - 45 years, 28.77%, for the age class of 26 - 35, 20.35%, for the age class of 15 - 25; 13.68%, for the age class of 46 - 55; and 7.37% for the age class of 56 years and above. The result on gender indicated that Males were 75.78%, while female was 24.21%, of the population. The result of marital status revealed that married respondents recorded 58.24%; singles had 29.82% while the widows recorded 11.93%. The results of the family size indicated that the family size of 10 - 14 recorded 37.54%; 5 - 9 family size had 22.46%; 15 - 19 recorded 20.70%; 1 - 4 had 11.23% while 20 and above recorded 8.07%. The result of occupation of the respondent indicated that farmers/grazers recorded 44.91%; business men/women were 18.59%; public servants recorded 14.74%, students were 12.98%, while house wives/widows recorded 8.77%. The educational qualification of the respondents revealed that non formal education recorded 37.89%, primary education recorded 21.40%, adult education, had 15.78%, and post primary education recorded 15.78% while tertiary education had 9.12%. The result of income level of the respondents revealed that N30,000 - N39,000 had 34.38%, N20,000 - N29,000 recorded 23.86%, N10,000 - N19,000, had 23.16%, N40,000 - N49,000, had 10.88% and N50,000 and above recorded 7.72%.

3.2. Anthropogenic Activities Affecting Habitat Resources of the Park

The results of anthropogenic activities affecting park resources are presented in Table 2. The result indicated that agricultural expansion/grazing recorded 31.58%; settlements-expansion recorded 23.68%; fuel wood harvesting recorded 18.42%. Bush burning/wildlife hunting had 15.79% while unemployment recorded 10.53%.

3.3. Provision of Social Amenities/Infrastructure to the Enclave's Communities by Gashaka Gumti National Park Management

The result of social amenities/infrastructure provided to communities by park

Table 1. Socio-economic characteristics of respondents in Gashaka Gumti National Park.

Status	Gashaka		Hendu		Shirigu		Filinga		Total	
Age class	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
15 - 25	12	17.14	19	25	14	22.58	13	16.88	58	20.35
26 - 35	23	32.86	20	26.32	21	33.87	18	23.38	82	28.77
36 - 45	18	25.71	25	32.89	12	19.35	30	38.96	85	29.82
46 - 55	10	14.29	8	10.53	11	17.74	10	12.98	39	13.68
56 above	7	10	4	5.26	4	6.45	6	7.79	21	7.37
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**
Gender										
Male	48	68.57	56	73.68	52	83.87	60	77.92	216	75.78
Female	22	31.43	20	26.32	10	16.13	17	22.08	69	24.21
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**
Marital status										
Married	40	57.14	41	53.95	35	56.45	50	64.94	166	58.24
Single	21	30	23	30.26	19	30.64	22	28.57	85	29.82
Widow	9	12.86	12	15.78	8	12.90	5	6.49	34	11.93
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**
Family size										
1 - 4	9	12.86	5	6.58	8	12.90	10	12.98	32	11.23
5 - 9	13	18.57	18	23.68	12	19.35	21	27.27	64	22.46
10 - 14	27	38.57	34	44.73	21	33.87	25	32.47	107	37.54
15 - 19	16	22.85	15	19.74	15	24.19	13	16.88	59	20.70
20 above	5	7.14	4	5.26	6	9.68	8	10.38	23	8.07
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**
Occupation										
Farmer/grazer	31	44.28	36	47.36	28	45.16	33	42.85	128	44.91
Businessman	16	22.85	19	25	6	9.68	12	15.58	53	18.59
Public servant	6	8.57	12	15.78	9	14.52	15	19.48	42	14.74
House wife/widow	9	12.86	3	3.95	7	11.29	6	7.79	25	8.77
Student	8	11.43	6	7.89	12	19.35	11	14.28	37	12.98
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**
Educational level										
Non Formal Edu.	24	34.28	33	43.42	21	33.87	30	38.96	108	37.89
Adult Edu.	9	12.86	14	18.42	10	16.13	12	15.58	45	15.78
Primary Edu.	5	7.14	18	23.68	15	24.19	23	29.87	61	21.40
Post Primary Edu.	19	27.14	7	9.21	11	17.74	8	10.39	45	15.78
Tertiary Edu.	13	18.57	4	5.26	5	8.06	4	5.19	26	9.12
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**

Continued

Income										
₦10 - 19,000	15	21.43	19	25	11	17.74	21	27.27	66	23.16
₦20 - 29,000	18	25.71	14	18.42	19	30.64	17	22.08	68	23.86
₦30 - 39,000	26	37.14	29	38.16	15	24.19	28	36.36	98	34.38
₦40 - 49,000	7	10	9	11.84	7	11.29	8	10.39	31	10.88
₦50,000 above	4	5.71	5	6.59	10	16.13	3	3.89	22	7.72
Total	**70**	**100**	**76**	**100**	**62**	**100**	**77**	**100**	**285**	**100**

Source: Field research, 2015.

Table 2. Anthropogenic factors affecting habitat resources of the study area.

Anthropogenic Factors	Frequency	%
Fuel wood harvesting	7	18.42
Bush burning/wildlife hunting	6	15.79
Unemployment	4	10.53
Settlement expansion	9	23.68
Agricultural expansion/grazing	12	31.58
Total	**38**	**100**

Source: Field research, 2015.

authority is presented in Table 3. The result indicated that health facilities recorded 34.21%, educational facilities had 26.32% construction of culverts, bridges and feeder roads had (18.42%) employment recorded 13.16% while provision of water had 7.89%.

3.4. Strategies for Conservation of Park Resources by the Gashaka Gumti National Park Management

The Result of Conservation strategies by the park management is presented in Table 4. The result revealed that constant patrol recorded (47.37%) public enlightenment had (26.32%) intelligent report gathering recorded (15.78%) while prosecution of offenders had (10.53%).

3.5. Contribution of Adamawa and Taraba State Governments to Gashska Gumti National Park Management

The results of contribution of Adamawa and Taraba States are presented in Table 5. The results indicated that materials and technical services recorded 28.95%, provision of office and residential accommodation, had 23.68%, provision of manpower recorded 18.42%, financial assistance had 15.79%; while provision of security had 13.15%.

3.6. The Role of Non-Governmental Organizations (NGOs) towards Gashaka Gumti National Park Resources Conservation

The result of the role of Non-Governmental Organization (NGOs) towards park resources conservation is presented in Table 6. The result indicated that financial

Table 3. Social amenities/infrastructure provided by the park management to the enclaves communities.

Social Amenities/Infrastructure	Frequency	%
Educational facilities	10	26.32
Health facilities	13	34.21
Construction of culvert, bridge & feeder roads	7	18.42
Employment of indigenes	5	13.16
Potable drinking water	3	7.89
Total	**38**	**100**

Source: Field Research, 2015.

Table 4. Strategies for conservation of park resources by the park management.

Strategies for Conservation	Frequency	%
Constant patrol	18	47.37
Public enlightenment	10	26.32
Intelligence report gathering	6	15.78
Prosecution of offenders	4	10.53
Total	**38**	**100**

Source: Field research, 2015.

Table 5. Contribution of Adamawa and Taraba State to park management.

Contribution of States	Frequency	%
Provision of office & residential accommodation	9	23.68
Financial assistance	6	15.79
Provision of materials & technical services	11	28.95
Provision of man power	7	18.42
Provision of security	5	13.15
Total	**38**	**100**

Source: Field research, 2015.

Table 6. Contribution of non-governmental organizations towards park resources conservation.

Contributions of NGOs	Frequency	%
Public enlightenment on tree planting, bush burning, illegal hunting	11	28.95
Formation of foresters clubs in school	7	18.42
Financial assistance	15	39.47
Provision of transport & modern equipment	5	13.15
Total	**38**	**100**

Source: Field research, 2015.

assistance had 39.47% public enlightenment on tree planting, indiscriminate bush burning and illegal hunting, recorded 28.95%; formation of foresters club in schools had 18.42%; provision of transport and modern equipment had 13.15%.

3.7. Contribution of Adamawa and Taraba State Governments to Gashska Gumti National Park Management

The results of contribution of Adamawa and Taraba States are presented in Table 7. The results indicated that materials and technical services recorded 28.95%, provision of office and residential accommodation, had 23.68%, provision of manpower recorded 18.42%, financial assistance had 15.79%; while provision of security had 13.15%.

3.8. The Role of Non-Governmental Organizations (NGOs) towards Gashaka Gumti National Park Resources Conservation

The result of the role of Non-Governmental Organization (NGOs) towards park resources conservation is presented in Table 8. The result indicated that financial assistance had 39.47% public enlightenment on tree planting, indiscriminate bush burning and illegal hunting, recorded 28.95%; formation of forester's club in schools had 18.42%; provision of transport and modern equipment had 13.15%.

4. Conclusions and Recommendation

Findings on occupation of the respondents indicated that majority of them were farmers or/and pastoralists. The implication of this finding is that more lands will be required for both farming and grazing. This situation could lead to encroachment into the protected areas. Findings on literacy level showed that majority of the respondents had no formal education and may be classified as illiterates. This situation promotes ignorance, hence awareness of the values of the park project may be lacking among the populace. The range of the highest income per annum of the majority of the respondents was found to be low. This situation could prompt the populace in the study area to trespass into the park for the exploitation of the fauna and flora resources to supplement their income

Table 7. Contribution of Adamawa and Taraba state to park management.

Contribution of States	Frequency	%
Provision of office & residential accommodation	9	23.68
Financial assistance	6	15.79
Provision of materials & technical services	11	28.95
Provision of Man power	7	18.42
Provision of security	5	13.15
Total	**38**	**100**

Source: Field research, 2015.

Table 8. Contribution of non-governmental organizations towards park resources conservation.

Contributions of NGOs	Frequency	%
Public enlightenment on tree planting, bush burning, illegal hunting	11	28.95
Formation of foresters clubs in school	7	18.42
Financial assistance	15	39.47
Provision of transport & modern equipment	5	13.15
Total	**38**	**100**

Source: Field Research, 2015.

in order to meet the basic necessities of life. This is in consonance with the report of [13]. Overall, it may be inferred from the findings of this study that the age class, gender distribution, occupation, marital status, educational status, family size and income level of majority of the respondents were such that could encourage anthropogenic activities in the park and consequently lead to depletion of flora and fauna resources in the park.

The provision of some social amenities/infrastructures to the communities, the strategies of the park management for resources conservation and the contribution of governments and non-governmental organizations towards the conservation of the resources of the park may have influenced the people and curtailed illegal exploitation and consequently reduced the magnitude of the of anthropogenic activities. This may be true when the abundance and trend in major wildlife species of the park are considered. Findings on trend in the abundance of some major wildlife species of the park indicated steady increase over the period of the study (1993-2015). This may not be unconnected with the improved management practices and the strategies of the park management as well as the positive contribution of government and non-governmental organizations. These findings agree with the report of [14] in an earlier study in Gashaka Gumti National Park.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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